

Date: Friday, 9/1/2006 12:15:00 PM
 User: Kim Johnston

Process Sheet

Customer : CU-DAR001 Dart Helicopters Services. Drawing Name : 0H-58 SKIDTUBE ASSEMBLY
 Job Number : 28397A
 Estimate Number : 10475
 P.O. Number :
 This Issue : 9/1/2006 S.O. No. :
 Prsht Rev. : NC Drawing Number : D2922 REV A1
 First Issue : 1-1 Type : LANDING GEAR Project Number : N/A
 Previous Run : 28396A Drawing Revision : A1
 Material :
 Due Date : 9/30/2006 Qty: 1 Um: Each
 Written By :
 Checked & Approved By : *HA 06 09 01*
 Comment : Est Rev: C 02.06.28 Re-format; ECN 258 KJ
 Est Rev: D 06.02.06 Added D18025 EC

Additional Product

Job Number:



Seq. #:

Machine Or Operation:

Description:

1.0

DC

DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Photocopy bluefile & type labels per PPP D058-672-041

CHG 001

KS 06-09-07

2.0

D2620

Bent 206 Skidtube



Comment: Qty.: 1.0000 Each(s)/Unit Total: 1.0000 Each(s)

Pick:

Qty Part Number

Description

Batch

1 D2620

Bent Tube 3" OD

B27831 DP 6-9-5

3.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Deburr Fwd edge of tube

DP 6-9-5

2-Weld D2794 cap as per QSI 004 and Dwg D2922. Use aluminum rod.

A/R Aluminum Rod

M101010 BE 06-09-05
M101655

3-Drill pilot holes using drill jig DT8480 and DT8025 open to 0.312" dia.

4-Drill holes for wearplates using DT 8487 Open to 0.297" dia.

5-Drill holes for aft cap as per Dwg D2922 using drill jig DT 8025. Open using #6 Drill Bit

7-Remove inner indexing ridge on aft end of skidtube as per Dwg D2922

8-Deburr and Blow out all chips from inside the tube

3 BE 06-09-06

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
DATE	STEP	Description of NC Section A	Corrective Action Section B			Verification Section C	Approval Chief Eng	Approval QC Inspector
			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

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Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: 0H-58 SKIDTUBE ASSEMBLY

Job Number: 28397A

Part Number: D058672041

Job Number:



Seq. #:

Machine Or Operation:

Description :

9-Cut aft end of D2620 bent tube as per dwg D2922

BE 06-09-06

4.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

Chemical Conversion Coat as per QSI 005 4.1

BE 06-09-06

5.0

D2923

Web



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 D2923 Web

3 28406

BE 06-09-06

6.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Open holes to finished size as per Dwg D2922(without cutting fluid)

2-Countersink crossbolt spacer holes as per Dwg D2922(without cutting fluid)

3-Deburr and Blow out all chips from inside the tube

4-Bond D2923 web in place as per QSI 015. Ensure holes lineup

A/R Sikaflex-291

Sikaflex expire date: 06-10-21

m101953

BE 06-09-06

7.0

QC5

INSPECT WORK TO CURRENT STEP



Comment: INSPECT WORK TO CURRENT STEP

pm 06-09-70

8.0

D2794

Cap



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Qty

Part Number Description

1 D2794 Fwd Cap

Batch

14400

BE 06-9-5

W/O:		WORK ORDER CHANGES					
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Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

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Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: OH-58 SKIDTUBE ASSEMBLY

Job Number: 28397A

Part Number: D058672041

Job Number:



Seq. #:

Machine Or Operation:

Description :

9.0

D2649

Crossbolt Spacer



Comment: Qty.: 22.0000 Each(s)/Unit Total: 22.0000 Each(s)

Pick:

Qty Part Number

Description

Batch

22 D2649

Crossbolt spacer

B25864 BE 06-09-07

10.0

LANDING GEAR 1

LANDING GEAR RESOURCE 1



Comment: LANDING GEAR RESOURCE 1

1-Weld D2649 cross bolt spacers as per QSI 004 and Dwg D2922.(Remember to back drill each hole to 0.250" before welding the other side)

A/R

Aluminum Rod

M101010 BE 06-09-07

3-Grind welds flush as per Dwg D2922

BE 06-09-11

4-Counterbore 5/16" x 0.750" deep as per Dwg D2922

BE 06-09-11

11.0

QC5/9

WELD INSPECTION



Comment: WELD INSPECTION

06-09-14 (1)

11/06/09/12

12.0

POWDER COATING

POWDER COATING



Comment: POWDER COATING

Powder Coat White Gloss (Ref: 4.3.5.1) as per QSI 005 4.3

FC 06 09 15 (1)

13.0

QC3

INSPECT POWDER COAT/CHEMICAL CONVERSION



Comment: INSPECT POWDER COAT/CHEMICAL CONVERSION

a.m 06-09-18 (1)

14.0

D26483

Wearpad



Comment: Qty.: 5.0000 Each(s)/Unit Total: 5.0000 Each(s)

Pick:

Qty Part Number

Description

Batch

5 D2648-3

Wearpad

B27169-2

a.m 06-09-18 (1)

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

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Process Sheet

Customer: CU-DAR001 Dart Helicopters Services

Drawing Name: OH-58 SKIDTUBE ASSEMBLY

Job Number: 28397A

Part Number: D058672041

Job Number:



Seq. #:

Machine Or Operation:

Description :

15.0

D265615

Wearplate



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 D2656-15 Wearshoe

Δ 24845

16.0

D265621

Wearplate



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 D2656-21 Wearshoe

B 20917

17.0

D2924

Wearshoe



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 D2924 Wearshoe

B 2425

18.0

MS27039108

Screw



Comment: Qty.: 50.0000 Each(s)/Unit Total : 50.0000 Each(s)

Pick:

Qty Part Number Description Batch

50 MS27039-1-08 Screw

M 1100854

19.0

AN960JD10L

Washer



Comment: Qty.: 50.0000 Each(s)/Unit Total : 50.0000 Each(s)

Pick:

Qty Part Number Description Batch

50 AN960JD10L Washer

M 100233

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

QA: N/C Closed: _____ Date: _____

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Job Number: 28397A

Part Number: D058672041

Job Number:



Seq. #:

Machine Or Operation:

Description :

20.0

ALS41032130

Insert



Comment: Qty.: 50.0000 Each(s)/Unit Total : 50.0000 Each(s)

Pick:

Qty Part Number Description Batch

50 ALS4-1032-130 Insert m19393
or (see QSI 017)

21.0

D26511

Plug



Comment: Qty.: 20.0000 Each(s)/Unit Total : 20.0000 Each(s)

Pick:

Qty Part Number Description Batch

20 D2651-1 Plugs 028400

22.0

D26513

O-Ring



Comment: Qty.: 20.0000 Each(s)/Unit Total : 20.0000 Each(s)

Pick:

Qty Part Number Description Batch

20 D2651-3 O-Rings 025866

23.0

D2646

Aft Cap



Comment: Qty.: 1.0000 Each(s)/Unit Total : 1.0000 Each(s)

Pick:

Qty Part Number Description Batch

1 D2646 Aft Cap 026041

24.0

MS27039108

Screw



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Pick:

Qty Part Number Description Batch

2 MS27039-1-08 Screw m100854 a.m 06-09-18 (1)

Dart Aerospace Ltd

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes ☒ No ☐ DQA: PA Date: 06/09/28
 QA: N/C Closed: _____ Date: _____

NCR:		WORK ORDER NON-CONFORMANCE (NCR)						
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Drawing Name: 0H-58 SKIDTUBE ASSEMBLY

Job Number: 28397A

Part Number: D058672041

Job Number:



Seq. #:

Machine Or Operation:

Description :

25.0

AN960JD10L

Washer



Comment: Qty.: 2.0000 Each(s)/Unit Total : 2.0000 Each(s)

Pick:

Qty Part Number Description Batch

2 AN960JD10L Washer m100933

a-m 06-09-18

(1)

26.0

HAND FINISHING1

HAND FINISHING RESOURCE #1



Comment: HAND FINISHING RESOURCE #1

1-Install inserts & wearpads as per dwg D2922. Insert a drop of Sikaflex at insert hole before installing wearplates.

A/R Sikaflex-291

m101933

Sikaflex expire date: 10-21-06

2-Install O-Rings D2651-3 on plugs D2651-1 with Petroleum Jelly and install plugs as per Dwg D2922

3-Install D2646 Aft Cap and seal with Sikaflex adhesive.Clean excess adhesive

A/R Sikaflex-291

m101933

Sikaflex expire date: 10-21-06

3- Wing Walk as per Dwg D2922 and QSI 005 4.4

Batch:

m101667

a-m

06-09-28

(1)

27.0

QC3/5

INSPECT WORK/WING WALK



Comment: INSPECT WORK/WING WALK

28.0

PACKAGING 1

PACKAGING RESOURCE #1



Comment: PACKAGING RESOURCE #1

Identify and Stock

Location: _____

M/A

06/09/28

29.0

DC

DOCUMENT CONTROL



Comment: DOCUMENT CONTROL

Inspection Level 21

06/09/28

Job Completion



06/09/28

W/O:		WORK ORDER CHANGES					
DATE	STEP	PROCEDURE CHANGE	By	Date	Qty	Approval Chief Eng / Prod Mgr	Approval QC Inspector

Part No: _____ PAR #: _____ Fault Category: _____ NCR: Yes No DQA: _____ Date: _____

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			Initial Chief Eng	Action Description Chief Eng	Sign & Date			

NOTE: Date & initial all entries



DESIGN RF	DRAWN BY RF	DART AEROSPACE USA, INC. BELLEVUE, WA	
CHECKED [Signature]	APPROVED [Signature]	DRAWING NO. D2922	REV. A SHEET 1 OF 2
DATE 99.10.14		TITLE OH-58 SKIDTUBE ASSEMBLY	SCALE NTS
A	99.10.14	NEW ISSUE	
A1	01.08.20	Ø0.640 WAS Ø0.625	

RELEASED
00.05.11 [Signature]

Qty	Part Number	Description
X	D2922-041	SKIDTUBE ASSEMBLY
*	D2600-1	EXTRUSION
1	D2646	AFT CAP.
4	D2648-3	WEARPAD
1	D2648-5	WEARPAD
22	D2649	CROSS BOLT SPACER
20	D2651-1	PLUG
20	D2651-3	O-RING
1	D2656-15	WEARSHOE
1	D2656-21	WEARSHOE
1	D2794	CAP
1	D2923	WEB
1	D2924	WEARSHOE
50	AKS7-1032-130 or AKS4-1032-130 or ALS7-1032-130 or ALS4-1032-130	INSERT
52	AN960JD10L	WASHER
52	MS27039-1-08	SCREW

GENERAL NOTES:

- 1) TOLERANCES ARE PER DART QSI 018 UNLESS OTHERWISE NOTED
- 2) LENGTH OF D2600-1 EXTRUSION REQUIRED BEFORE BENDING = 160 INCHES.*
- 3) INSERT D2923 WEB TO LOCATION SHOWN OFF AFT END OF SKIDTUBE AND BOND WEB INTO OUTER TUBE WITH NON-STRUCTURAL SIKAFLEX-241/291 ADHESIVE PER DART QSI 015 AFTER BENDING.
- 4) USE DART DRILL TEMPLATE DT8406 TO LOCATE AND DRILL Ø0.297 HOLES FOR WEARSHOE INSERTS. INSTALL AKS7-1032-130 PER SECTION D-D (50 PLACES) AFTER FINISH. INSTALL MS27039-1-08 SCREWS AND AN960JD10L WASHERS IN ALL INSERTS. SEAL WITH SIKAFLEX-241/291.
- 5) WELDING TO BE DONE PER DART QSI 004.
- 6) FINISH:
ACID ETCH, ALODINE PER DART QSI 005 4.1 PRIOR TO INSERTING D2923 WEB
POWDER COAT ASSEMBLY GLOSS WHITE (REF 4.3.5.1) PER DART QSI 005 4.3
BLACK ANTI-SKID PAINT AS INDICATED TO 0.50 ABOVE LOCATION RIDGE PER DART QSI 005 4.4
- 7) INSERT D2651-1 PLUG C/W D2651-3 O-RING IN HOLES MARKED 'P' (BOTH SIDES OF TUBE) AFTER FINISH (20 PLACES).

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WITHOUT NOTICE
WORK ORDER
28397A

NO. 2

AWS D17.1.2001
QUALIFICATION TEST RECORD

Name Barclay Elliott
Joint Welding Procedure Tig
Part number and Job number A858672041 / B28396A

TEST WELDS REQUIRED

BASE METAL Alum WELDING PROCESS Tig
Penetration Complete ☐ Partial ☒ Single Weld ☒ Double Weld ☐
Current AC ☒ DC ☐ Backing YES ☐ NO ☒

	Position	Vertical	Down <input type="checkbox"/>	Up <input type="checkbox"/>
Sheet Groove	1G <input type="checkbox"/>	2G <input type="checkbox"/>	3G <input type="checkbox"/>	4G <input type="checkbox"/>
Tube Groove	1G <input type="checkbox"/>	2G <input type="checkbox"/>	5G <input type="checkbox"/>	6G <input type="checkbox"/>
Sheet Fillet	1F <input type="checkbox"/>	2F <input type="checkbox"/>	3F <input type="checkbox"/>	4F <input type="checkbox"/>
Tube Fillet	1F <input type="checkbox"/>	2F <input type="checkbox"/>	4F <input type="checkbox"/>	5F <input type="checkbox"/>

Crossbolt Spacer Welded into A858672041 Skidtube

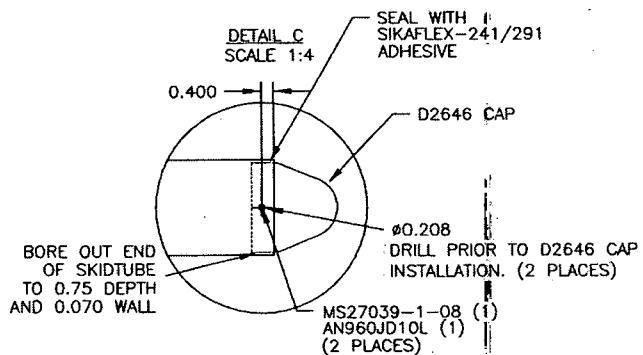
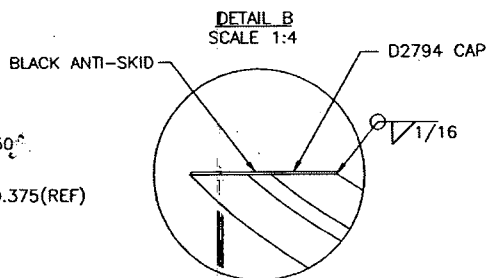
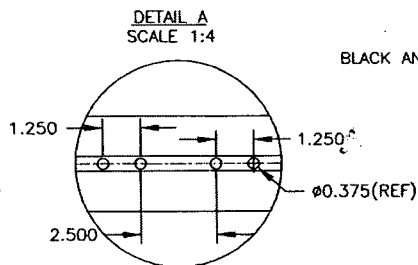
TEST RESULTS

Visual Pass ☒ Fail ☐
Penetration Pass ☒ Fail ☐
Crossbolt Spacer Pass ☒ Fail ☐

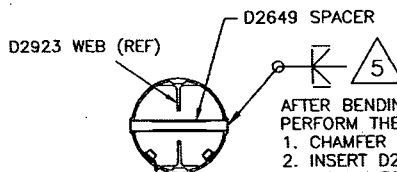
The above named individual is qualified in accordance with AWS D17.1.2001 to weld

Date of Test Coupon 06/09/06

Qualifier David Suval



SECTION D-D
SCALE 1:4
FOR 0.375 HOLES ONLY

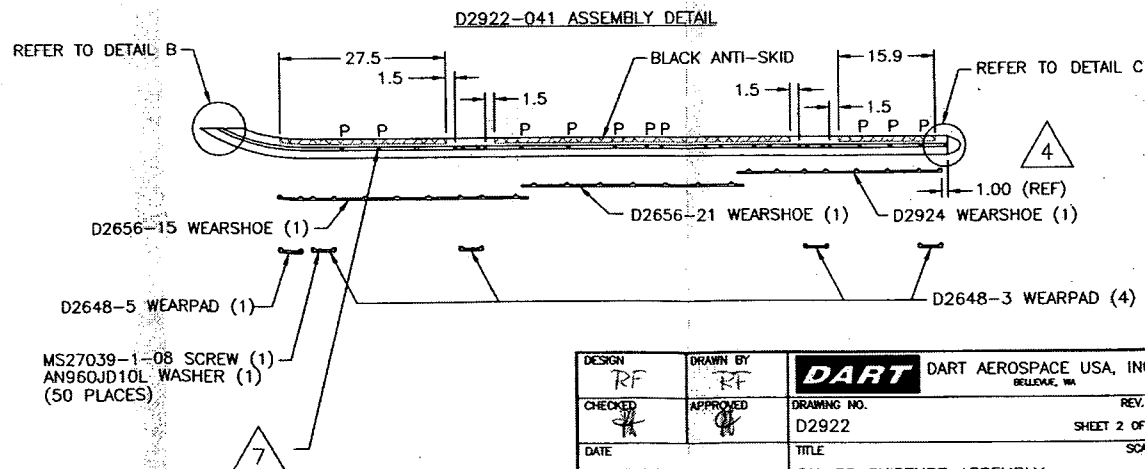
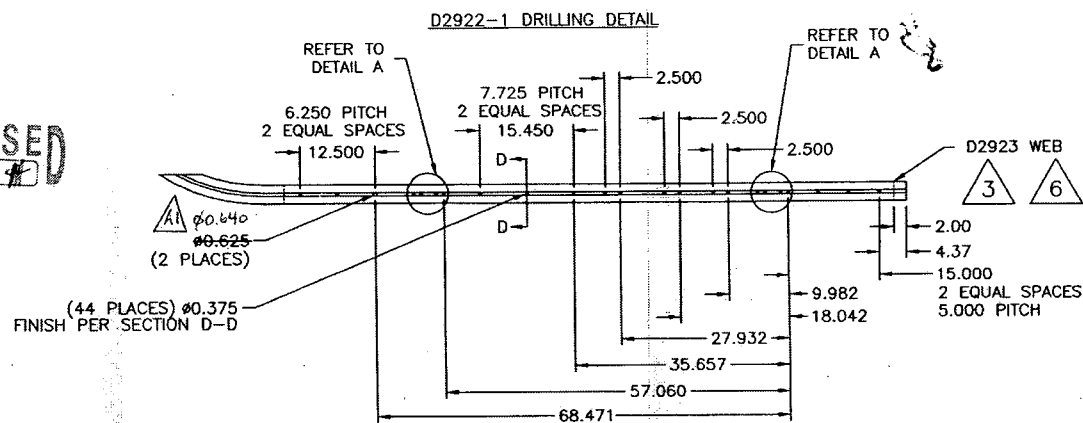
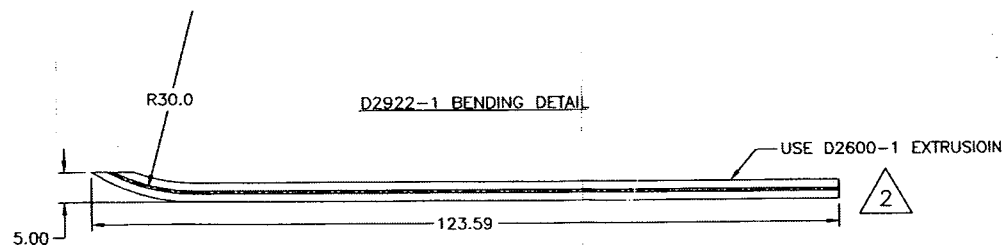


AFTER BENDING AND DRILLING ASSEMBLY
PERFORM THE FOLLOWING FOR 0.375 HOLES ONLY:

1. CHAMFER HOLE 0.030 X 45°
2. INSERT D2649 SPACER (22 PLACES)
3. WELD INTO PLACE AND GRIND FLUSH
4. C'BORE D2649 SPACER TO 0.313 X 0.75 DEEP

AKS7-1032-130 (REF)
(TYP 50 PLACES)

RELEASED
00.05.11



DESIGN RF	DRAWN BY RF	DART DART AEROSPACE USA, INC. BELLINGHAM, WA	REV. A
CHECKED JA	APPROVED Q	DRAWING NO. D2922	SHEET 2 OF 2
DATE 99.10.14	TITLE OH-58 SKIDTUBE ASSEMBLY	SCALE 1:20	

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